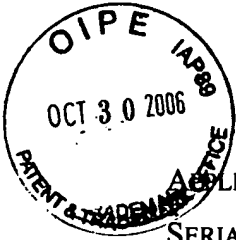


11-01-06

JFW



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Uchida et al.
SERIAL NUMBER: 10/524,953 EXAMINER : Ruth A. Davis
FILING DATE: September 28, 2005 ART UNIT : 1651
FOR: ENRICHED CENTRAL NERVOUS SYSTEM STEM CELL AND
PROGENITOR CELL POPULATIONS, AND METHODS FOR
IDENTIFYING, ISOLATING AND ENRICHING FOR SUCH
POPULATIONS

MAIL STOP AMENDMENT

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, Applicants hereby make of record the documents listed on the attached modified Form PTO-1449, as well as copies of the listed documents.

This Information Disclosure Statement is being filed before the mailing date of a first Office Action based on the merits in the above-identified case. Accordingly, no fee or certification is believed required. By the waiver of 37 CFR 1.98(a)(2)(i) copies of U.S. Patent A1 and U.S. Patent Applications A2-3 are not submitted.

It is respectfully requested that the Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application.

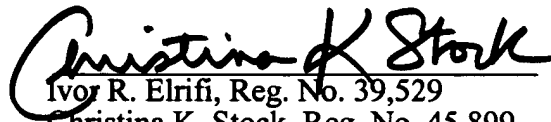
By submitting this Information Disclosure Statement, the Applicants make no representation that: (1) a search has been performed, of the extent of any search performed, or that more relevant information does not exist; (2) the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b); and (3) the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

APPLICANT: Uchida et al.
U.S.S.N.: 10/524,953

Notwithstanding any statements by the Applicants, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information. An early and favorable action is hereby requested.

Please charge any fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Reference No. 17810-518 NATL.

Respectfully submitted,



Ivor R. Elrifi, Reg. No. 39,529

Christina K. Stock, Reg. No. 45,899

Attorney(s) for Applicants

c/o MINTZ, LEVIN

Address all written correspondence to

Customer no.: 30623

Tel: (617) 542-6000

Fax: (617) 542-2241

Date: October 30, 2006

TRA 2205781v.1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Uchida et al.
SERIAL NUMBER: 10/524,953 EXAMINER : Ruth A. Davis
FILING DATE: September 28, 2005 ART UNIT : 1651
FOR: ENRICHED CENTRAL NERVOUS SYSTEM STEM CELL AND
PROGENITOR CELL POPULATIONS, AND METHODS FOR
IDENTIFYING, ISOLATING AND ENRICHING FOR SUCH
POPULATIONS

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

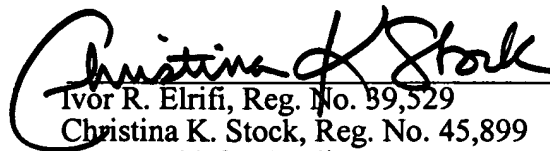
Transmitted herewith for filing in the present application are the following documents:

1. Information Disclosure Statement (2 pages), in duplicate;
2. Modified Form 1449/PTO (4 pages), in duplicate;
3. Copies of Cited References: B1-2; C1-59; and
4. Return Postcard.

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 542-6000, Boston, Massachusetts.

The Commissioner is authorized to charge any fees that may be due, or to credit any overpayment, to the undersigned's account, Deposit Account No. 50-0311 Ref. No. 17810-518 NATL. A duplicate copy of this transmittal letter is enclosed herewith.

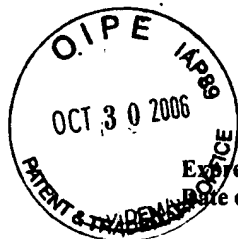
Respectfully submitted,



Ivor R. Elrifi, Reg. No. 39,529
Christina K. Stock, Reg. No. 45,899

Attorney(s) for Applicants
c/o MINTZ, LEVIN
Address all written correspondence to
Customer no.: 30623
Tel: (617) 542-6000
Fax: (617) 542-2241

Date: October 30, 2006



Express Mail No.: EV 869858444 US
Date of Deposit: October 30, 2006

Page 1 of 4
Attorney Docket No.: 17810-518 NATL

Please type a plus sign (+) in this box

PTO/SB (12-97)
Approved for use through 9/30/00. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Modified Form 1449/PTO				Application Number		10/524,953	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Filing Date		September 28, 2005	
				First Named Inventor		Uchida	
				Group Art Unit		1651	
				Examiner Name		Ruth A. Davis	
				Attorney Docket Number		17810-518 NATL	
U.S. PATENT DOCUMENTS							
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate
	*A1	6,468,794 B1	10/22/02	Uchida et al.	435	368	
U.S. PUBLISHED APPLICATION DOCUMENTS							
Exam Initials	Cite No.	U.S. Published Application No.	Published Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate
	*A2	2003/0040023	02/27/03	Klassen et al.	435	7.21	
	*A3	2003/0109039	06/12/03	Buck et al.	435	368	
FOREIGN PATENT DOCUMENTS							
Exam Initials	Cite No.	Foreign Patent Document Office Number	Name of Patentee(s) or Applicant(s)	Date of Publication	Translation Yes No		
	B1	WO 95/13103	DESMOS, INC.	05/18/95			
	B2	WO 00/47762	STEM CELLS, INC.	08/17/00			
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS							
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.					
	C1	Allendoerfer et al., "Forse-1, an antibody that labels regionally restricted subpopulations of progenitor cells in the embryonic central nervous system, recognizes the Le ^x carbohydrate on a proteoglycan and two glycolipid antigens", <i>Mol. Cell. Neurosci.</i> , 6:381-395 (1995)					
	C2	Allendoerfer et al., "Morphological domains of Lewis-X/FORSE-1 immunolabeling in the embryonic neural tube are due to developmental regulation of cell surface carbohydrate expression", <i>Dev. Biol.</i> , 211:208-219 (1999)					
	C3	Ashwell et al., "Developmental expression of the CD15 epitope in the hippocampus of the mouse", <i>Cell Tissue Res.</i> , 289(1):17-23 (1997)					
	C4	Bach et al., "Stem cells: the intestinal stem cell as a paradigm", <i>Carcinogenesis</i> , 21(3):469-476 (2000)					
	C5	Bartsch et al., "Distribution of the 3-fucosyl-N-acetyl-lactosamine (FAL) epitope in the adult mouse brain", <i>Cell Tissue Res.</i> , 263:353-366 (1991)					
	C6	Bird et al., "Oligosaccharides containing fucose linked α (1-3) and α (1-4) to N-acetylglucosamine cause decompaction of mouse morulae", <i>Dev. Biol.</i> , 104(2):449-460 (1984)					
	C7	Calaora et al., "mCD24 expression in the developing mouse brain and in zones of secondary neurogenesis in the adult", <i>Neuroscience</i> , 73(2):581-594 (1996)					

C8	Campos-Ortega, J.A., "Genetic mechanisms of early neurogenesis in drosophila melanogaster", <i>Mol. Neurobiol.</i> , 10:75-89 (1995)
C9	Cao et al., "Pluripotent stem cells engrafted into the normal or lesioned adult rat spinal cord are restricted to a glial lineage", <i>Exp. Neurol.</i> , 167(1):48-58 (2001)
C10	Chiasson et al., "Adult mammalian forebrain ependymal and subependymal cells demonstrate proliferative potential, but only subependymal cells have neural stem cell characteristics", <i>J. Neurosci.</i> , 19(11):462-4471 (1999)
C11	Davis et al., "A self-renewing multipotential stem cell in embryonic rat cerebral cortex", <i>Nature</i> , 372:263-266 (1994)
C12	Dodd et al., "Cell surface glycoconjugates and carbohydrate-binding proteins: possible recognition signals in sensory neurone development", <i>J. Exp. Biol.</i> , 124:225-238 (1986)
C13	Doetsch et al., "Subventricular zone astrocytes are neural stem cells in the adult mammalian brain", <i>Cell</i> , 97(6):703-716 (1999)
C14	Doetsch et al., "Regeneration of a germinal layer in the adult mammalian brain", <i>Proc. Natl. Acad. Sci. USA</i> , 96(20):11619-11624 (1999)
C15	Dvořák et al., "Embryoglycan ectodomains regulate biological activity of FGF-2 to embryonic stem cells", <i>J. Cell Sci.</i> , 111(19):2945-2952 (1998)
C16	Fox et al., "Immunohistochemical localization of the early embryonic antigen (SSEA-1) in postimplantation mouse embryos and fetal and adult tissues", <i>Dev. Biol.</i> , 83(2):391-398 (1981)
C17	Gage, F.H., "Mammalian neural stem cells", <i>Science</i> , 287:1433-1438 (2000)
C18	Gocht et al., "CD15-containing glycoconjugates in the central nervous system", <i>Histol. Histopathol.</i> , 11:1007-1028 (1996)
C19	Gomperts et al., "Interactions between primordial germ cells play a role in their migration in mouse embryos", <i>Development</i> , 120:135-141 (1994)
C20	Gooi et al., "Stage-specific embryonic antigen involves α 1-3 fucosylated type 2 blood group chains", <i>Nature</i> , 292:156-158 (1981)
C21	Gould et al., "Neurogenesis in the neocortex of adult primates", <i>Science</i> , 286:548-552 (1999)
C22	Gritti et al., "Multipotential stem cells from the adult mouse brain proliferate and self-renew in response to basic fibroblast growth factor", <i>J. Neurosci.</i> , 16(3):1091-1100 (1996)
C23	Gritti et al., "Multipotent neural stem cells reside into the rostral extension and olfactory bulb of adult rodents", <i>J. Neurosci.</i> , 22(2):437-445 (2002)
C24	Hakomori, S., "Le ^x and related structures as adhesion molecules", <i>Histochem. J.</i> , 24(11):771-776 (1992)
C25	Jessell et al., "Carbohydrates and carbohydrate-binding proteins in the nervous system", <i>Annu. Rev. Neurosci.</i> , 13:227-255 (1990)
C26	Jirmanova et al., "O-linked carbohydrates are required for FGF-2-mediated proliferation of mouse embryonic cells", <i>Int. J. Dev. Biol.</i> , 43(6):555-562 (1999)
C27	Johansson et al., "Identification of a neural stem cell in the adult mammalian central nervous system", <i>Cell</i> , 96(1):25-34 (1999)
C28	Jones et al., "Stem cell patterning and fate in human epidermis", <i>Cell</i> , 80(1):83-93 (1995)
C29	Kato et al., "Physiological degradation converts the soluble syndecan-1 ectodomain from an inhibitor to a potent activator of FGF-2", <i>Nat. Med.</i> , 4(6):691-697 (1998)

C30	Kawaguchi et al., "Nestin-EGFP transgenic mice: visualization of the self-renewal and multipotency of CNS stem cells", <i>Mol. Cell. Neurosci.</i> , 17(2):259-273 (2001)
C31	Kempermann et al., "Genetic influence on neurogenesis in the dentate gyrus of adult mice", <i>Proc. Natl. Acad. Sci. USA</i> , 94(19):10409-10414 (1997)
C32	Kondo et al., "Oligodendrocyte precursor cells reprogrammed to become multipotential CNS stem cells", <i>Science</i> , 289:1754-1757 (2000)
C33	Klassen et al., "Surface markers expressed by multipotent human and mouse neural progenitor cells include tetraspanins and non-protein epitopes", <i>Neurosci. Lett.</i> , 312:180-182 (2001)
C34	Laywell et al., "Identification of a multipotent astrocytic stem cell in the immature and adult mouse brain", <i>Proc. Natl. Acad. Sci. USA</i> , 97(25):13883-13888 (2000)
C35	Lois et al., "Proliferating subventricular zone cells in the adult mammalian forebrain can differentiate into neurons and glia", <i>Proc. Natl. Acad. Sci. USA</i> , 90:2074-2077 (1993)
C36	Mai et al., "Demarcation of prosencephalic regions by CD15-positive radial glia", <i>Eur. J. Neurosci.</i> , 10(2):746-751 (1998)
C37	Marani et al., "A longitudinal band-pattern for the monoclonal human granulocyte antibody B _{4,3} in the cerebellar external granular layer of the immature rabbit", <i>Histochem.</i> , 78(2):157-161 (1983)
C38	Marani et al., "Stage specific embryonic carbohydrate surface antigens of primordial germ cells in mouse embryos: FAL (S.S.E.A.-1) and globoside (S.S.E.A.-3)", <i>Acta Morphol. Neerl.-Scand.</i> , 24(2):103-110 (1986)
C39	Marmur et al., "Isolation and developmental characterization of cerebral cortical multipotent progenitors", <i>Dev. Biol.</i> , 204:577-591 (1998)
C40	Milev et al., "The core protein of the chondroitin sulfate proteoglycan phosphacan is a high-affinity ligand of fibroblast growth factor-2 and potentiates its mitogenic activity", <i>J. Biol. Chem.</i> , 273(34):21439-21442 (1998)
C41	Morrison et al., "Regulatory mechanisms in stem cell biology", <i>Cell</i> , 88(3):287-298 (1997)
C42	Morrison et al., "Prospective identification, isolation by flow cytometry, and in vivo self-renewal of multipotent mammalian neural crest stem cells", <i>Cell</i> , 96(5):737-749 (1999)
C43	Morshead et al., "Neural stem cells in the adult mammalian forebrain: a relatively quiescent subpopulation of subependymal cells", <i>Neuron</i> , 13(5):1071-1082 (1994)
C44	Muramatsu, T., "Cell surface glycoproteins: biochemical, immunological and molecular biological studies", <i>Nagoya J. Med. Sci.</i> , 57:95-108 (1994)
C45	Nowakowski et al., "New neurons: extraordinary evidence or extraordinary conclusion?", <i>Science</i> , 288:771a-773a (2000)
C46	Palmer et al., "The adult rat hippocampus contains primordial neural stem cells", <i>Mol. Cell. Neurosci.</i> , 8(6):389-404 (1997)
C47	Palmer et al., "Vascular niche for adult hippocampal neurogenesis", <i>J. Comp. Neurol.</i> , 425(4):479-494 (2000)
C48	Reynolds et al., "Oligodendroglial progenitors labeled with the O4 antibody persist in the adult rat cerebral cortex in vivo", <i>J. Neurosci. Res.</i> , 47(5):455-470 (1997)
C49	Reynolds et al., "Generation of neurons and astrocytes from isolated cells of the adult mammalian central nervous system", <i>Science</i> , 255:1707-1710 (1992)

	C50	Rietze et al., "Purification of a pluripotent neural stem cell from the adult mouse brain", <i>Nature</i> , 412:736-739 (2001)
	C51	Sakakibara et al., "Mouse-musashi-1, a neural RNA-binding protein highly enriched in the mammalian CNS stem cell", <i>Dev. Biol.</i> , 176:230-242 (1996)
	C52	Seaberg et al., "Adult rodent neurogenic regions: the ventricular subependyma contains neural stem cells, but the dentate gyrus contains restricted progenitors", <i>J. Neurosci.</i> , 22(5):1784-1793 (2002)
	C53	Solter et al., "Monoclonal antibody defining a stage-specific mouse embryonic antigen (SSEA-1)", <i>Proc. Natl. Acad. Sci. USA</i> , 75(11):5565-5569 (1978)
	C54	Suhonen et al., "Differentiation of adult hippocampus-derived progenitors into olfactory neurons in vivo", <i>Nature</i> , 383:624-627 (1996)
	C55	Tole et al., "FORSE-1: a positionally regulated epitope in the developing rat central nervous system", <i>J. Neurosci.</i> , 15(2):957-969 (1995)
	C56	Uchida et al., "Direct isolation of human central nervous system stem cells", <i>Proc. Natl. Acad. Sci. USA</i> , 97(26):14720-14725 (2000)
	C57	Weiss et al., "Multipotent CNS stem cells are present in the adult mammalian spinal cord and ventricular neuroaxis", <i>J. Neurosci.</i> , 16(23):7599-7609 (1996)
	C58	Winkler et al., "Incorporation and glial differentiation of mouse EGF-responsive neural progenitor cells after transplantation into the embryonic rat brain", <i>Mol. Cell. Neurosci.</i> , 11(3):99-116 (1998)
	C59	Yamamoto et al., "Fucose-containing glycolipids are stage- and region-specific antigens in developing embryonic brain of rodents", <i>Proc. Natl. Acad. Sci. USA</i> , 82:3045-3049 (1985)

* By the waiver of 37 CFR 1.98(a)(2)(I) copies of the U.S. Patent A1 and U.S. Published Applications A2-3 are not submitted.

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.